



# FINAL REPORT

*(due within 3 months on completion of project)*

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## *Part 1 - Summary Details*

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Cotton CRC Project Number: 5.01.19

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**Project Title:** NCMA Schedule 1.2 Delivering NRM technical advice and investment projects in the Narrabri and Wee Waa districts

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**Project Commencement Date:** 1/7/09

**Project Completion Date:** 30/06/12

**Cotton CRC Program:** 5.1 Knowledge Transfer

## *Part 2 – Contact Details*

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**Signature of Research Provider Representative:** \_\_\_\_\_

## ***Part 3 – Final Report Guide (due within 3 months on completion of project)***

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### ***Background***

The Namoi Catchment Management Authority (Namoi CMA) and the Cotton Catchment Communities CRC (Cotton CRC) entered into a partnership in 2005. A number of projects were undertaken within this partnership as part of the Namoi CMA and Cotton CRC Umbrella, Agreement: This is the final report for the program “Delivering NRM technical advice and investment projects in the Narrabri and Wee Waa districts” which sat under Schedule 1.2 of the Umbrella Agreement.

The project aimed to provide technical advice to stakeholders, primarily cotton growers in the Namoi catchment, on a range of Namoi CMA Management Targets. Armed with the technical advice stakeholders would then be able to develop investment projects to deliver landscape change with a focus on managing soils, biodiversity, riparian areas and catchment communities.

### ***Objectives***

The objectives of Schedule 1.2 were to:

- Provide technical information and specific advice to all stakeholders, especially cotton growers, irrigators and the Cotton Catchment Officer. Liaise with government and non-government agencies and other experts to ensure effective delivery of technical solutions to support Namoi CMA and Cotton CRC activities.
- Promote, develop, manage and implement well defined projects and program components, including contract management and monitor and review on ground works.
- Participate and assist in the development of cotton grower projects and NRM plans with the Cotton Catchment Officer. Analyse and assess project outcomes to ensure outcomes are consistent and technically achievable.
- Liaise and negotiate with Cotton CRC staff, other agencies and stakeholders to facilitate change and acceptance and implementation of CMA initiatives.
- Assist with the delivery of the Cotton CRC Caring for our Country project – Cotton growers working together for a sustainable landscape.

### ***Methods***

A Namoi CMA Catchment Officer was employed on a part-time basis (3 days per week) for 36months and located at the Cotton CRC Office at ACR1 Myall Vale with 20% of this person’s time dedicated to the cotton industry. The Namoi CMA funded the salary, on-costs and education resources component of the position and the Cotton CRC funded the office, vehicle etc.

The role of the Catchment Officer was to:

- Provide technical information and advice to: Cotton growers as required up to a maximum of 20%, and: all other stakeholders for the balance of the time.

- Promote, develop, implement, manage and monitor investment projects for all targeted stakeholders
- Collaborate with the Cotton Catchment Officer to develop, implement, manage and monitor investment projects for cotton growers
- Work with the Cotton Catchment Officer to develop and deliver property planning workshops and property plans,
- Assist the cotton catchment officer to deliver the cotton industries Natural Assets BMP module
- Spend 20% of their time assisting with the delivery of the Cotton CRC Caring for our Country project

### **Results**

Over the project period, the Namoi CMA Catchment Officer developed and delivered a number of extension and education activities that provided technical NRM information to a range of stakeholders as well as promoting NCMA investment projects. These activities are listed below.

- 5 presentations at cotton industry field day, forums and conferences. E.g:
  - 2010 Property Planning workshop, promoting NCMA incentive programs
  - 2011 Linking trees and production Field day at Federation Farm (Promoting Canopy Program)
  - 2011 Sustainable Landscape Planning workshop - *Improving Native vegetation condition and connectivity*
  - 2012 Science Forum - *Best Practice Partnerships* overview of NCMA and Cotton CRC partnership outcomes
  - 2012 Birds, Bats & Lady Beetles Workshop Series - *Principles of Native Vegetation Management*
- Participated in 9 networks – Lower Namoi Cotton Growers Association, National Cotton Extension Team; Namoi BMP Regional Extension Team; Merrimborough Landcare Group; Narrabri Community Bushcare Group, Wee Waa Floodplain Management Plan Steering Committee, Cotton Catchment Officer Steering Committee, NCMA incentive development and planning teams (Soil Carbon Program, Groundcover Demonstration Trial Program, Canopy Cover Program), and the CRC Caring for Country “Sustainable landscapes” project steering Committee.
- Produced and/or contributed to 10 publications, including:
  - *Best Practice Partnership* Brochure, this brochure was submitted at the 2010 National Cotton Conference where it was awarded the Peoples Choice Award  
[http://www.cottoncrc.org.au/catchments/Publications/Catchment\\_Partnerships](http://www.cottoncrc.org.au/catchments/Publications/Catchment_Partnerships)
  - *Principles of Native vegetation Management for enhancing Beneficial insects* chapter in the Cotton production manual

- *Principles of Native vegetation Management for enhancing Beneficial insects*  
Cotton Pest Management Guide
- Pests and Beneficial Insects in Australian Cotton landscapes Guidebook  
[http://www.cottoncrc.org.au/catchments/Publications/Biodiversity/Sustainable Cotton Landscapes](http://www.cottoncrc.org.au/catchments/Publications/Biodiversity/Sustainable_Cotton_Landscapes)
- Cotton Seed Distributors “web on Wednesday” interview on the principles of native vegetation management for enhancing beneficial insects  
<http://www.csd.net.au/wow/show/1541/>
- Spotlight Spring 2011 edition, front cover photo and article on Pests and Beneficial Insects in Australian Cotton landscapes Guidebooks new Sustainable Landscape Section
- Spotlight Autumn 2011 edition Cotton grower Andrew Watson case study on “Ecosystem services and beneficial insects”
- A Cotton Landscapes Native Vegetation Action Plan for cotton growers that outlines 6 principles and a series of actions for managing native vegetation
- Native Vegetation Condition Assessment for Cotton Growers.
- “Soil Sodality” fact sheet -NCMA Groundcover Demonstration Trials Program
- Organized 11 field days at which approximately 150 people attended, including:
  - 2010 Narrabri Fish off-takes Field Day
  - 2010 Walgett Launch of the “Grazing pastures of the Lower Namoi Floodplain Plant ID book” plus plant ID field day.
  - 2010 *Soil Carbon Workshop* with Grazing Best Practice
  - 2011 Wee Waa & Walgett *Soil and Plant Nutrition Workshop* with Bart Davidson
  - 2011 Narrabri *Linking trees and Production – Canopy Cover Field Day*– Federation Farm
  - 2011 Gunnedah & Narrabri *Groundwater Monitoring and Management Workshop*  
[http://www.cottoncrc.org.au/catchments/My\\_Catchments/Namoi\\_Catchment/Namoi\\_Groundwater\\_Forum\\_2010](http://www.cottoncrc.org.au/catchments/My_Catchments/Namoi_Catchment/Namoi_Groundwater_Forum_2010)
  - 2012 Burren Junction & Wee Waa *Birds, Bats and Lady Beetles Gardening and Landscape Planning Workshops* (2 workshops)
  - 2012 Burren Junction & Wee Waa *Spotlight Evenings & BBQ* (2 field days)
  - 2012 Narrabri *Precision Ag Workshop*

Over the project period, the Namoi CMA Catchment Officer promoted, developed, managed and implement a number of projects and program components., including contract management and monitoring.

- Undertook approximately 60 farm visits for 1 on 1 NRM extension with cotton growers and other landholders.
- Facilitated 13 landholders (2 cotton farms) to obtain financial incentives to manage natural resources on their farm. 3053ha of land now managed

sustainably under Namoi CMAs Management Target MTL1 and 4km of riparian area managed under Management Target RE4.

- The Catchment Officer also managed and monitored 6 NCMA on-ground projects which were contracted under the previous project period as well as the 21 contracts which were contracted between 2006 and 2009 under Schedule 1.4 for the CRC on-ground NRM incentives projects. Further detail on the on-ground incentives is provided in the Schedule 1.4 report.
- Contributed to the development and planning for the delivery of the following NCMA program areas: Soil Carbon, Groundcover Demonstration Trials and Canopy Cover.

Over the project period, the Namoi CMA Catchment Officer worked closely with the Cotton Catchment Officer (CCO) to assist with the delivery of NCMA NRM targets within the Namoi catchment.

- Member of the Cotton Catchment Officers Steering Committee.
- Audited the technical resources sitting behind the Natural Assets module of myBMP and assisted the my BMP team identify existing resources that could be linked to the natural assets module that would fill in identified resource gaps.
- Worked with CCO to integrate a myBMP session into the Namoi CMA and Grazing BestPrac 2011 Property Planning Workshops
- Co-developed and delivered the March 2011 Groundwater Management & Monitoring Workshop. Two workshops were run in collaboration with Water Research Lab UNSW and NSW DPI with 21 growers attending the workshops.
- Co-developed the *"Best Practice Partnership"* brochure highlighting the outcomes of from the NCMA and CCC CRC partnership.

The final objective of the project was to assist the Cotton CRC deliver its objectives within the Namoi catchment under the Federal Governments Caring for Our Country 2011/12 Business Plan project titled *"Cotton growers working together for a sustainable landscape."* The responsibility of the project officer under the CFOC project was to support 10 cotton farming neighbours in two groups to improve biodiversity benefits at a landscape scale through the adoption of activities that contribute to the ongoing conservation and protection of biodiversity. The project also aimed to improve the knowledge, skills and engagement of farmers in managing natural resources. These project objectives aligned with the NCMA's 2011/2012 on-ground Canopy incentives program to improve the condition and connectivity of Native vegetation within the lower Namoi floodplain.

Under the CFOC project each group was to:

- Participate in workshops
- Undertake monitoring
- Develop Management plans, and
- Implement on-ground activities to value of \$10,000 per group

Due to the history of poor engagement around Native vegetation management within the lower Namoi floodplain a different approach to the past was taken. Instead of targeting the men on farms the project decided to trial an approach that target women in farming, from this approach the “Lady Beetles, Birds & Bats Workshop Series” was developed and implemented.

### **“Lady Beetles, Birds & Bats Workshop Series”**

The approach of this workshop series was to engage women in farming in Native vegetation management. Under this series, one workshop and one field day was developed and delivered to two different groups of farming women. The aim was to target social networks of farming women as this would hopefully assist with the “landscape” planning approach of the project.

### **Workshop 1 Outline - “Garden and Landscape Planning”**

The workshop was designed as a “Garden and Landscape Planning” day which linked the principles of Native Vegetation Management to gardening and advised participants of activities they could undertake in their gardens to encourage native wildlife such as birds, microbats, lizards ect to reside in their gardens. We also tried to increase peoples knowledge and value of native plants by enlisting the help of a local caterer “Relish” who designed a “Bush Tucker” themed menu. This workshop was developed and delivered by the project officer and Philip Pettit a horticulturalist from Sydney Royal Botanical Gardens Community Gardening program.

As part of the workshop participants worked their way through a Vegetation Management Action Plan which outlined what the principles were for managing and maintaining healthy native vegetation and connectivity as well as the actions they could undertake within the landscape to maintain or enhance their patch of vegetation. At the end of the workshop participants “workshopped” some ideas of what actions they could undertake within their landscape to improve native vegetation health and connectivity and spend the \$10,000 allocated to their group for on-ground works.

To help capture the monitoring and planning component of the project a family biodiversity competition called “Scats, traces and tracks” was developed (see Appendix) for participants of the workshop. Participants were asked to undertake a vegetation condition assessment on their farm using a proforma that was developed as part of the CFOC project by UNE honours student Chris Jacobs under Dr Rhiannon Smith supervision. As part of the competition participants were asked to identify “Actions” that they could put in place to improve their patch of vegetations health. Through a partnership developed with Taronga Western Plains Zoo, the winning entry would win a family pass to the zoo.

### **Workshop 2 Outline- Spotlight evening & BBQ**

The second workshop was developed as an opportunity to engage the whole family in an activity around native vegetation and biodiversity, in particular the husbands. A biodiversity spotlighting night was developed. The aim of the spotlight nights was to increase participants knowledge and value of the diversity of native animal species within their area and the types of habitats that they utilise to survive. Phil Sparks an ecologist from Ecological was contracted to run two spotlight nights and

undertake a night of trapping so that we could show some species that existed in the local area but may not be seen on the night.

## **Results**

Two “Garden and landscape planning” workshops were delivered, one at Burren Junction and one at Wee Waa with 16 women attending the two workshops. Two spotlight nights were also delivered with 90 people participating across the two nights.

### **Burren Junction Garden & Landscape Planning Workshop**

10 women from 10 different farms attended the first workshop which was held at the CWA hall in Burren Junction. The participants really enjoyed the workshop.



*Burren Junction Garden and Landscape Planning Workshop*

“Thursday was great! Thanks so much for organising it all - I learned heaps from you and Phil and food was awesome!” – F. Carlon

Listed below are the outcomes from the landscape planning session

- Key threatening processes to biodiversity and production identified by the group were feral pigs and weeds.
- Two participants were interested in riparian fencing
- Local TSR's seen as areas that could be revegetated as many believed they had little value under their current landuse.
- Installation of nesting boxes in key locations within the landscape
- As a group they were very interested in spending the \$10,000 on community based projects such as a biodiversity education area at Burren Junction school, a tree planting area at Burren Bore baths and a Native Vegetation propagation service.

### ***Burren Junction Group On-ground Activities***

After the workshop participants were asked to rank which activities they thought were a priority for spending the \$10,000 on. A biodiversity and education area at Burren Junction School was the most popular followed by nesting boxes. The project



officer is currently working with the workshop group and Burren Junction Primary School, Walgett Shire Council and the Department of Lands Moree to design a "Coolabah Black box Woodland" education area at the school as well as a site near the school where a vegetation planting can be undertaken. The vegetation plantings will be contracted out to Fields Nursery Armidale. In addition 20 microbat boxes and 10 owl boxes will be installed on participating farms.

### ***Burren Junction Group Monitoring***

Unfortunately the biodiversity competition was not as successful as we had hoped with only two families from this group returning their Vegetation condition assessment and action plan. The feedback from participants was that they were "too busy" and they "preferred if you helped us". To capture this information from the remaining participants the project officer is planning to undertake on farm visits during the July school holidays to assist the families complete this monitoring and at the same time identify the best place on their farm to install their nesting boxes.

### ***Burren Junction Group Spotlight Night***

The Spotlight Night was held at Bugilbone ridge. There were 40 people at the workshop from 9 different families. The spotlight night was a huge success and much of this is due to Phil Sparks's knowledge and passion for the local wildlife. The project officer received a number of phone calls as well as emails from participants after the night saying how much they enjoyed it. Some of these comments are below.



*Participants at the Burren Junction Spotlight evening*



*Children admiring a Burtons legless lizard*

"Thank you for such a wonderful 'spotlighting' night on Friday. It really was fun. My children had such a fabulous time- although I am afraid to admit my daughter is becoming quite the precious one, when it comes to walking through bush at night time!!!! The whole program has been fantastic. Well done and thank you for providing us with this service." – S. Ball

"Thankyou for a wonderful evening last night – the kids still won't stop talking about it!! Please pass on our thanks to Phil – it was a fantastic way to spend a night!" – S. Wright

"Hi Stacey, Everyone enjoyed the night here. Thanks for organising it". – K. Powell

### **Wee Waa Group Garden & Landscape Planning Workshop**



6 women from 6 different farms attended the first workshop which was held at “Warianna” near Wee Waa.

“Thank you for a wonderful day last week – it was fabulous” S. Michell

Listed below are the outcomes from the landscape planning session

- Key threatening processes to biodiversity and production identified by the group were feral pigs and weeds ( Lippia and African Box thorn).
- One participant was very interested in the concept of “beetle banks” ie planting NV for Integrated Pest Management on farm
- As a group they were very interested in spending the \$10,000 on community based projects such as planting trees around public assets, improving connectivity between Gunidgera and Pian Creeks at Merah and installing nesting boxes

### ***Wee Waa Group On-ground Activities***

After the workshop participants were asked to rank which activities they thought were a priority for spending the \$10,000 on. The most popular activity was nesting boxes and the second was increasing connectivity between Pian and Gunidgera Creeks. Over the next few months 12 micro bat boxes and 6 owlet boxes will be installed on participating farms and 20mx 60m vegetation planting undertaken on a participating farm at Merah North as a “Beetle Bank” and stepping stone between Gunidgera and Pian Creek.

### ***Wee Waa Group Monitoring***

The return rate of biodiversity assessment sheets was slightly higher with 50% of competitions returned. Unfortunately two participating farms, while they enjoyed the workshop series and will install the nesting boxes, they do not wish to participate in any future native vegetation monitoring or planning.

### ***Wee Waa Group Spotlight Night***

The Spotlight Night was held at “Yellow Bank” TSR on the Namoi River just outside Wee Waa. 50 people attended the spotlight night and again it was a huge success. Interestingly this spotlight nigh attracted a lot of families from the Township of Wee Waa as they heard about it through one of the garden planning workshop participants. Some of the feedback from the night is below.



*Wee Waa Spotlight evening*

“Thanks Stacey...it was such a FANTASTIC evening!” – N. Piper

## *Outcomes from schedule 1.2*

The continual success of the partnership between the NCMA and the Cotton CRC in terms of adoption of NRM within cotton landscapes is reflected in the achievements outlined within the results section of this report and in the awarding at the 2010 Cotton CRC Science Forum to the NCMA by the Cotton CRC of *The Impact on Adoption Award*.

There were a number of areas of particular success under the partnership over the past three years, these were

- The development of resource tools around the ecosystem service of native vegetation for integrated pest management such as :
  - The inclusion in the Cotton industries Pests and Beneficial Insects in Australian Cotton landscapes Guidebook of a chapter on the principles for maintaining and enhancing Native vegetation on cotton farms for beneficial insects
  - Case study of Cotton grower Andrew Watsons in Spotlights Autumn 2011 edition Cotton which looked at the economic benefits of managing native vegetation as part of the farming business
- The development of an engagement strategy and associated tools for improving the uptake of native vegetation management within cotton landscapes such as:
  - The Lady Beetled, Birds & Bats Workshop Series
  - The development of a vegetation condition assessment and native vegetation action plan for cotton growers
  - The implementation of a number of on-ground activities (due to occur in July 2012) to improve the health of the nationally significant Coolibah Blackbox Woodlands.

## *Conclusion*

Schedule 1.2 employed a Catchment Officer who was located at the Cotton CRC Office at Myall Vale and was responsible for delivering on-ground incentives, and promoting the NRM activities of the Cotton CRC and NCMA. The Catchment Officer facilitated a large number of NRM extension activities including 60 farm visits for 1 on 1 NRM extension with cotton growers and other landholders, producing and/or contributing to 10 publications, organizing 11 field days at which approximately 150 people attended and giving 5 presentations at cotton industry field day, forums and conferences. The Catchment Officer facilitated 13 landholders to obtain financial incentives to manage natural resources on their farms as well as managed and monitored 27 existing projects.

An independent evaluation of the Namoi CMA Cotton CRC partnership undertaken in 2009 found the partnership maximised the reach and impact of both organisations and increase the scope of their target audiences. The report states that without the partnership, neither organisation would have been able to achieve the same level of NRM outcomes which resulted from better management practises, improved use of resources, conservation and revegetation. The extension of the partnership for

another 3 years (1/7/2009 to 20/6/2012) saw the continual success of NRM delivery within cotton growing areas of the Namoi as outlined in this report. The success of the partnership was acknowledged by the Cotton CRC at the 2010 Science Forum with the NCMA and the project officer being awarded *The Impact on Adoption Award*.

There were a number of areas of particular success under the partnership over the past three years, these were

- The development of resource tools around the ecosystem service of native vegetation for integrated pest management such as :
  - The inclusion in the Cotton industries Pests and Beneficial Insects in Australian Cotton landscapes Guidebook of a chapter on the principles for maintaining and enhancing Native vegetation on cotton farms for beneficial insects
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- The development of an engagement strategy and associated tools for improving the uptake of native vegetation management within cotton landscapes such as:
  - The Lady Beetled, Birds & Bats Workshop Series
  - The development of a vegetation condition assessment and native vegetation action plan for cotton growers
  - The implementation of a number of on-ground activities (due to occur in July 2012) to improve the health of the nationally significant Coolabah Blackbox Woodlands.

The project officer was appointed in late 2010 to the Cotton CRC position of *Catchment Sub-program Leader (Integrated Farm & Catchment Management Resources)*. The appointment to this position reflected the success of the NCMA & Cotton CRC partnership in integrating the latest environmental research with actual on-farm outcomes.

### ***Extension Opportunities***

Many publications extend the success of the Namoi CMA – Cotton CRC partnership. For example:

- Presentations to Cotton CRC Science Forum (2012)
- Poster Presentation on the CMA & CRC partnership at the Australian Cotton Conference (2010) which won peoples choice award
- Cotton CRC water storey (in prep.)

### ***Publications***

Presentations (conference, field days, workshops etc)

- 2010 Property Planning workshop, promoting NCMA incentive programs
- 2011 Linking trees and production Field day at Federation Farm (Promoting Canopy Program)

- 2011 Sustainable Landscape Planning workshop - *Improving Native vegetation condition and connectivity*
- 2012 Science Forum - *Best Practice Partnerships* overview of NCMA and Cotton CRC partnership outcomes
- 2012 Birds, Bats & Lady Beetles Workshop Series – *Principles of Native Vegetation Management*

Peer reviewed articles / books

- *Best Practice Partnership Brochure*  
[http://www.cottoncrc.org.au/catchments/Publications/Catchment\\_Partnerships](http://www.cottoncrc.org.au/catchments/Publications/Catchment_Partnerships)
- *Principles of Native vegetation Management for enhancing Beneficial insects* chapter in the Cotton production manual
- *Principles of Native vegetation Management for enhancing Beneficial insects* Cotton Pest Management Guide
- *Pests and Beneficial Insects in Australian Cotton landscapes* Guidebook  
[http://www.cottoncrc.org.au/catchments/Publications/Biodiversity/Sustainable\\_Cotton\\_Landscapes](http://www.cottoncrc.org.au/catchments/Publications/Biodiversity/Sustainable_Cotton_Landscapes)
- Soil Sodidity fact sheet -NCMA Groundcover Demonstration Trials Program

## ***Part 4 – Final Report Executive Summary***

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Schedule 1.2 employed a Catchment Officer who was located at the Cotton CRC Office at Myall Vale and was responsible for delivering NRM technical advice, developing extension material and developing and managing investment projects within the lower Namoi catchment. The Catchment Officer facilitated a large number of NRM extension activities including 60 farm visits for the extension of 1 on 1 NRM extension advice with cotton growers and other landholders, producing and/or contributing to 10 publications, organizing 9 field days at which approximately 300 people attended and giving 8 presentations at cotton industry field day, forums and conferences.

The Catchment Officer has contributed to the developed a number of resources to assist landholders and extension staff managing natural resources on farms including:

- Pests and Beneficial Insects in Australian Cotton landscapes Guidebook, *Sustainable Landscapes Section – Principles for Native Vegetation Management*.
- “Soil Sodidity” fact sheet -NCMA Groundcover Demonstration Trials Program
- A Cotton Landscapes Native Vegetation Action Plan for cotton growers
- A Native Vegetation Condition assessment for Cotton Growers

The success of the partnership was acknowledged by the Cotton CRC at the 2010 Science Forum with the NCMA and the project officer being awarded *The Impact on Adoption Award*.

Partnering with the Cotton CRC has enabled the Catchment Officer to integrate research from the CRC's Catchment Programme into extension activities and ultimately deliver NRM outcomes in the Namoi Catchment. This report illustrates the wide audience reached by the Catchment Officer and the NRM outcomes achieved in the cotton industry and in this part of the Catchment.